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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,642	04/12/2004	Craig R. Horne	3275.06US03	1933

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Patterson, Thunte, Skaar & Christensen, P.A.  
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Minneapolis, MN 55402-2100

EXAMINER

HOFFMANN, JOHN M

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 11/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/822,642

Applicant(s)

HORNE ET AL.

Examiner

John Hoffmann

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 20,22-26 and 28-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20,22-26 and 28-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4-27-05</u> | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Election/Restrictions***

Applicant's election with traverse of Invention C in the reply filed on 8 September 2005 is acknowledged. The traversal is on the ground(s) that there is no serious burden. This is not found persuasive because it is merely allegation with no evidence or rationale to support the assertion. Still further, Applicant has not supplied any evidence or assertion that the species are obvious variant of each other. It is noted that the serious burden requirement pertains to restriction requirements, but not election of species requirements. Most importantly, there is a serious burden – each of the species require completely different searches, with no meaningful overlap between the subclasses searched. For example species C would have the main search in 65/412, Specie B, in 65/417, and Specie A in 65/404. And none would require either of the other two.

The requirement is still deemed proper and is therefore made FINAL.

This application contains claims 1-19 drawn to an invention nonelected with traverse. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 20, 22-26, 28-30<sup>+35</sup> are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Examiner could find no support for the newly claimed powdered metal coating that was formed in a flowing reactor as claimed – either explicit or implicit. Whereas applicant points to original claim 27, that claim only indicates that the metal was in the coating – but there is no indication as to how the metal was placed there, or if it was even in the form of a powder.

Turning to the specification, page 23, line 26 has support for the powder metal. But, there is no indication as to how it is made. It is Examiner's understanding that most powder metallurgy processes create the powdered metals via a melt process – i.e. with no reaction and thus no reaction chambers. So, it appears that nothing in the specification teaches making the metal powder in the chamber as claimed.

Applicant also points to page 5 and 9. Page 5 gives no indication that metal powders are produced as claimed. Page 9, lines 18-28 clearly indicate that the particles are glasses and the metals are merely dopants there to. More over, lines 5-6 of the

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same page clearly indicate that the metal is ALREADY FORMED prior to being inserted into the reactor. The metals are not created in the reactor.

This is deemed to be a prima facie showing on failure to comply with the requirement. The burden is now on Applicant to show the requirement is complied with.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 31-32 and <sup>36</sup>~~36~~-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Hicks 4749396.

Col. 4, lines 19-22 discloses the step of inserting. Lines 48-60 of the same column discloses that the insert has a powder coating. As to the limitation that the powder "was formed": such denotes past tense. The formation of the powder is NOT a step of the method. Rather, it is deemed that applicant is limiting the structure of the powder in a product-by-process manner. However, it is not the unclaimed process which controls, rather it is the material that results from the unclaimed process.

As mentioned at MPEP 2113:

The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be

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expected to impart distinctive structural characteristics to the final product. See, e.g., *In re Gamero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979)

It is also noted that the courts have been holding for quite some time that “—in spite of the fact that a product-by-process claim may recite only process limitations, it is the product which is covered by the claim and not the recited process steps.” (*In re Hughes*, 182 USPQ). Also, “—patentability of a claim to a product does not rest merely on a difference in the method by which that product is made. Rather, it is the product itself which must be new and unobvious.” (*In re Pilkington*, 162 USPQ 147).

The Patent Office bears a lesser burden of proof in making out a case of prima facie obviousness for product-by-process claims because of their peculiar nature. *In re Fessmann*, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

The above case law refers to product-by-process claims. Examiner presumes that the same applies to product-by-process limitations, such as found in the present claims. Applicant's coating appears to be the same or similar to the Hicks coating, because Hick merely has the same or similar reactants and the same results —the only difference is the heat source. One looking at the Hicks or applicant's coating would be unable to ascertain whether or not a laser was utilized in its formation.

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Applicant is reminded that any showing of any difference between the two coatings has to reasonably suggest that it pertains to all laser formation processes. For example, Applicant might be able to show that a particular embodiment will produce a coating which is completely different from Hick's. However since the claims are not limited to that specific embodiment, such a showing is not likely to be convincing.

Claim 32: this CVD inherently creates submicron particles which means the average size would also be sub-micron. See Sarkar, col. 2, lines 15-30 for evidence that such is inherent. See prior Office action also.

Claim 37: it is deemed that figure 3 of Hicks disclose a uniformly dispersed layer at least at the particular cross-section

Claim 36: the rotation is during the formation not part of the claimed process. Rather it is part of the product by process. One looking at the Hicks preform would be unable to ascertain whether or not it was rotated.

Likewise for claim 38 – by looking at the inserted rod, one cannot tell whether such is “was formed” with a laser as claimed.

### ***Claim Rejections - 35 USC § 103***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Hicks 4749396 as applied to claim 31 above, and further in view of Sarkar 4599098, Miller 4501602, and optionally Schultz 4263031.

See how Hicks and Sarkar. as indicated above, the difference between the present invention and Hicks is the indication of particle size. The level of ordinary skill is deemed to be sufficient to create sub-micron sized particles in the CVD process since



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that that is what Sarkar suggests is needed “for producing high purity silica glasses” (col. 2, lines 15-17). It would have been obvious to one performing the Hicks method to create submicron sized particles – because that is what is typically done in CVD methods for creating high purity silica glasses.

Miller is cited for teaching it is preferred to have sizes not exceeding 0.1 microns (col. 10, lines 35-43) so as to obtain void-free glasses. Schultz is cited as giving guidance as to how to create 0.1 micron silica particles (col. 4, lines 26-31). It would have been obvious to use 0.1 micron (i.e. 100 nm) (or less) sized particles so as to obtain void-free glass. Alternatively, it would have been obvious to perform routine experimentation to determine the optimal particle size: Miller discloses that such is a result-effective variable.

### ***Response to Arguments***

Applicant's arguments filed 8 Sept 2005 have been fully considered but they are not persuasive.

The arguments relating to “rare earth metal” were noted. However they only address the “oxidation state” (which relates to the number of electrons). Examiner is not aware of anything which precludes a metal (i.e. a any of various opaque, fusible, ductile and typically lustrous substances that are good conductors of electricity and heat...) from having a non-zero oxidation state. In other words: applicant's oxidation

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state definition gives no clues as to whether it includes or excludes non-zero oxidation states that were caused by oxygen.

However, Applicant did point to lines 14-24 of page 23 of the specification. Examiner noted the subsequent sentence on page 23, explicitly refers to using "metal particles" and (most importantly) differentiates between "metal particles" and "metal... compositions, such as, metal... oxides". In other words: page 23 of the specification demonstrates Applicant's intention to interpret "metal" as being different from "metal oxide".

Given: 1) the well understood meaning of "metal"; 2) the specification's explicit disclosure of "metal particles"; 3) the specification's differentiation of "metal" and "metal oxides"; 4) that the Office informed (see last rejection) applicant that there might be ambiguity with the term "metal" and thus gave applicant the opportunity to amend the claims to remove any ambiguity, it is deemed that the term "rare earth metal" encompasses metals and does not include metal oxides.

Thus, a patent applicant has the opportunity and responsibility to remove any ambiguity in claim term meaning by amending the application. In re Prater, 415 F.2d 1393, 1404-05 (CCPA 1969).

Applicant's arguments state that the term encompasses rare earth metals having non-zero oxidation states, such as found in rare earth metal oxides. This comment sort of suggests that the metals can be metal oxides. However, when one dissects applicant's argument, it merely states that the oxidative state (i.e. oxidation number) of the atoms are the same as that in oxides. It is presumed that applicant would have made a clear statement, such as "rare earth metals can encompass oxides of rare

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earths. Since applicant did NOT make such a statement, it is inferred that applicant did not intend such a scope.

Nevertheless, even if applicant did intend such a scope, factors 1-4 above would out-weigh any new definition for "metal" that applicant is now advocating. Any new definition would be new matter.

The specification must clearly set forth the definition explicitly and with reasonable clarity, deliberateness and precision. *Teleflex Inc. v. Ficosa North America Corp.*, 63 USPQ2d 1374, 1381 (fed. Cir. 2002), *Rexnord Corp. v. Laitram Corp.* 60 USPQ2d 1851, 1854 (fed. Cir. 2001) and MPEP 2111.01.

AS to the prior art rejections: the rejections are moot in light of the new grounds of rejection see above. Claim 20 and the claims that depend therefrom are not rejected over prior art, because the prior art does not recognize using a coated insert where the coating was formed in a reactor as claimed. However the claims are not indicated as allowable, because of the above rejection (page 3) of those claims.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

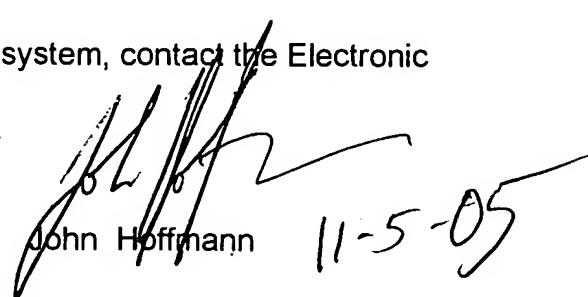
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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
John Hoffmann 11-5-05

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Primary Examiner  
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jmh